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SCROPHULARIACEAE OF THE LOCAL FLORA. V

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Concluded from November TORREYA

16. BUCHNERA L. Sp. Pl. 630. 1753

Type species, *B. americana* L.

- I. BUCHNERA AMERICANA L. l.c. 630. 1753. "Habitat in Virginia, Canada." Based upon Gron., Fl. Virg. 74. 1743, typified by *Clayton 142* from Virginia. Type not verified, but description distinctive.

Flowering in July, fruiting in August and September.

Sandy or sterile loam soil, occasional in the Piedmont Region in the southwestern extremity of our area. Delaware County, Pennsylvania (Williamson School), Lancaster Co. (Pleasant Grove), and in Newcastle Co., Delaware (Centreville). Ranges from Pennsylvania to Florida, southern Ontario, Illinois and Louisiana.

17. SCHWALBEA L. Sp. Pl. 606. 1753

Type species, *S. americana* L.

- I. SCHWALBEA AMERICANA L. l.c. 606. 1753. "Habitat in America septentrionali." Linné had in his herbarium no specimen of this, so that his species is based wholly upon Gron., Fl. Virg. 71. 1743, typified by *Clayton 33* from Virginia. This from the description of the leaves as lanceolate and the plant as quite pubescent would appear to have been the species now considered.

Flowering from mid-June to early July, fruiting in September.

Sandy soil, usually rather damp, in pineland and about edges of salt-marsh, in the Coastal Plain of southern New Jersey and

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in central Delaware. Ranges from southeastern Massachusetts to Virginia, so is to be expected in eastern Long Island.

18. CASTILLEJA Mutis; L. f. Suppl. 293. 1781

Type species, *C. fissifolia* L. f., of Colombia

I. CASTILLEJA COCCINEA (L.) Spreng.

Bartsia coccinea L. Sp. Pl. 602. 1753. "Habitat in Virginia, Noveboraco . . . Hort. Cliff. 235." From L., Hort. Cliff. 325. 1737, "Crescit in Virginia, unde delatam communicavit DD. Gronovius," and from Gron., Fl. Virg. 69. 1743, "Clayt. n. 293." Clayton 293, the type, must be certainly the species here considered.

Rhinanthus coccineus (L.) Lam. Encyc. 2: 60. 1786.

Euchroma coccinea (L.) Nutt. Gen. N. Am. Pl. 2: 55. 1818.

Type of the genus *Euchroma* Nutt.

Castilleja coccinea (L.) Spreng. Syst. 2: 775. 1825.

Flowering from late April to early June, and soon ripening fruit.

Meadows and moist grassy slopes, loam or sandy loam, through the Piedmont Region, more frequent westward; in the Coastal Plain occasional in the Middle District of southern New Jersey. Ranges from Maine to Manitoba south to South Carolina and Kansas.

19. RHINANTHUS L. Sp. Pl. 603. 1753

Type species, *R. Crista-galli* L., of Europe

I. RHINANTHUS CRISTA-GALLI L.

Flowering in May and early June, fruiting in late June.

Fields and open places near Stratford, Connecticut. Probably introduced from Eurasia, although said to be native north-eastward.

20. PEDICULARIS L. Sp. Pl. 607. 1753

Type species, *P. palustris* L., of Europe

Stem 6-8 dm. tall, glabrous. Leaves shallowly lobed, the sinuses narrow, the lobes with minute regular crenations. Bracts auriculate near base. Rachis of inflorescence glabrous. Fused sepals of each side terminating in a slightly enlarged crenate foliar tip, glabrous or with a very few long hairs near base. Corolla with truncate apex of posterior

lobes without tooth-like processes. Capsule brown, scarcely exceeding calyx, slenderly beaked. Flowering in late summer.

1. *P. lanceolata*.

Stem 1-3 dm. tall, hirsute, especially above. Leaves deeply lobed, the sinuses broad, the lobes with more prominent irregular crenations. Bracts entire near base. Rachis of inflorescence lanate. Fused sepals of each side broadly acute, entire, pubescent along the veins. Corolla with apex of posterior lobes each with a tooth-like process. Capsule straw-colored, twice as long as the calyx, scarcely beaked. Flowering in spring.

2. *P. canadensis*.

1. *PEDICULARIS LANCEOLATA* Michx. Fl. Bor. Am. 2: 18. 1803.
 "Hab. in regione Illinoensi [*A. Michaux*]." Type not verified, but description distinctive.

Pedicularis auriculata Sm. in Rees Cycl. 26: 1813. "Sent by the Rev. Dr. Muhlenberg, from the neighborhood of Lancaster in Pennsylvania." Description distinctive.

Pedicularis pallida Banks; Pursh, Fl. Am. Sept. 424. 1814.
 "In a swamp near Kings-bridge, New York. . . . *Ph.* [= *Pursh*] . . . v.v.; v.s. in Herb. Banks." Description distinctive.

Flowering from late August to late September, fruiting late September and October.

Swales and moist meadows, loam soil, in the Piedmont region, more frequent southwestward; occasional in the Middle District of the Coastal Plain of southern New Jersey, extending nearly to Cape May. Ranges from Massachusetts to Manitoba, North Carolina and Nebraska.

2. *PEDICULARIS CANADENSIS* L. Mant. 86. 1767. "Habitat in America septentrionali. *Kalm*." Description distinctive.
Pedicularis gladiata Michx. Fl. Bor. Amer. 2: 18. 1803.
 "Hab. in Pennsylvania [*A. Michaux*]." Description quite distinctive.

Flowering from late April to late May, fruiting in late May and early June.

Woodland, or on knolls in meadows, loam or sandy loam, common throughout above the Fall-Line; in the Coastal Plain frequent or occasional in Long Island and in the Middle District of southern New Jersey. Ranges from Nova Scotia to Manitoba, south to Florida and Texas.

21. MELAMPYRUM L., Sp. Pl. 605. 1753

Type species, *M. cristatum* L. of Europe

Main stem-leaves linear or lanceolate-linear. Bracts conspicuously fimbriate near base, with teeth frequently as long as the width of the blade. Capsules mostly 6-7 mm. long, curved and usually attenuate-beaked. Seeds 2-2.5 mm. long, brown to blackish.

1. *M. lineare*.

Main stem-leaves linear-lanceolate to nearly ovate. Bracts slightly or not fimbriate near base, the teeth shorter than the width of the blade. Capsules frequently larger, reaching 8-9 mm. long, slightly or not curved and less or not attenuate-beaked. Seeds often larger, reaching 3 mm. long, usually black.

1a. *M. lineare latifolium*.

I. MELAMPYRUM LINEARE Desr.; Lam. Encyc. 4: 22. 1796.

"Rapportée de la Caroline par M. Fraser . . . (v.s.)"

Description made from a very small and young plant, but certainly of the form here considered. Characterization of calyx as 5-toothed surely erroneous.

Flowering from mid-June to September, and soon ripening fruit.

Sandy soil, pineland and in open deciduous woodland, common throughout the Coastal Plain; inland occasional and mostly transitional to var. *latifolium*. Ranges from Massachusetts to North Carolina, and, including varieties, inland northward across the continent.

1a. MELAMPYRUM LINEARE LATIFOLIUM (Muhl.) Beauverd

Melampyrum americanum Michx. Fl. Bor. Amer. 2: 16.

1803. "Hab. a sinu Hudsonis ad montosam Carolinam.

[*A. Michaux*]." Description evidently of the prevalent inland broader-leaved plant.*Melampyrum latifolium* Muhl. [Cat. 57. 1813. *nomen nudum*]; Eaton, Man. Bot. N. & M. St. ed. II 316. 1818.

From Muhlenberg's Catalog, the type station is in Delaware. Type not seen, but evidently is of the inland broader-leaved plant.

Melampyrum americanum latifolium (Muhl.) Eaton, l.c. ed.

III. 350. 1822.

Melampyrum pratense americanum (Michx.) Benth. in DC.

Prod. 10: 584. 1846.

Melampyrum lineare latifolium (Muhl.) Beauverd in Mem. Soc. Phys. Genève 38: 474. 1916.

Melampyrum lineare americanum (Michx.) Beauverd, l.c. 476. 1916. Beauverd distinguishes *latifolium* with bracts broader, the lower entire, the upper entire or few-toothed, and the first flower placed at the third or fourth node, from *americanum* with bracts narrower, the lower entire or slightly toothed, the upper always toothed, and the first flower in the axil of the fourth to eighth node. His *americanum* is transitional from *latifolium* to *lineare* itself, from which he distinguishes both these varieties as having corolla whitish, tinged with purple, instead of pale-yellow, tinged with purple. The corolla of the species, as well of var. *latifolium* as I understand it, has the corolla white, posteriorly more or less tinged with red, especially in age, and only the palate yellow. His color distinction cannot be maintained, and I should consider the broadest, most entire-leaved plants as an extreme of this variety.

Flowering from late May to mid-August, and soon ripening fruit.

Dry open woods, in potassic soil, sandy or sterile, locally common on sandstone or shale ridges, etc., throughout the area above the Fall-line; in the Coastal Plain occasional on Long Island and in the Middle District of southern New Jersey. Intergrading to the species.

LOCAL SPECIMENS OF THE AUTHOR'S COLLECTING

As my own collections illustrating our local species of Scrophulariaceae in part have already been, and in part are soon to be, distributed to various herbaria, it may be well here to present a summary of the numbers of these. The specimen numbers will be grouped by species and states. All are from the local flora as defined in the introduction to these studies.

Agalinis acuta (N. Y.) 5292, 6551, 6552, 9340, 10126.

Agalinis Holmiana (N. Y.) 10167. (N. J.) 1662, 2695, 3544, 3583, 3628, 6483, 9117.

- Agalinis maritima* (N. Y.) 9359. (N. J.) 1807, 2157.
- Agalinis purpurea* (N. Y.) 5291, 6549, 6647, 9366, 10146. (N. J.) 2602, 2603, 2604, 4004, 6492, 6524, 6637, 9294. (Pa.) 476, 750, 786, 838, 847, 1660, 2682, 2689, 3598, 3609, 5182, 5272, 8984.
- Agalinis tenuifolia* (Conn.) 8578. (N. Y.) 6651, 6698, 9226. (N. J.) 1664, 6534, 9870. (Pa.) 658, 837, 1642, 2681, 2688, 2690, 3543, 5289, 8906.
- Agalinis virgata* (N. J.) 2692, 2694, 3584, 3626, 3808, 6521, 6523, 9114.
- Aureolaria flava* (N. Y.) 5293, 8434, 9407. (N. J.) 8358. (Pa.) 3541, 3624, 5225, 5260, 5284, 5286, 6791.
- Aureolaria pedicularia* (N. Y.) 9225, 10171. (N. J.) 10040. (Pa.) 583, 991, 1948, 3542, 3559, 3585, 3589, 3625, 5192, 5226, 5261, 5262, 5265, 5288, 8831, 8860. (Del.) 1519. (Md.) 1619.
- Aureolaria pedicularia caesariensis* (N. J.) 1837, 3545, 3627, 6487, 9155.
- Aureolaria pedicularia intercedens* (Pa.) 676, 4982.
- Aureolaria virginica* (N. Y.) 5294, 6868, 8459. (N. J.) 3546, 3986, 6489, 7363, 7428, 8345, 9208. (Pa.) 337, 4985, 5021, 5067, 5227, 5259, 5283, 6503, 6793, 7850, 7912, 8847, 9412. (Del.) 7754. (Md.) 1615.
- Castilleja coccinea* (Pa.) 1290, 2034, 2772.
- Chelone glabra* (N. Y.) 6643, 6678, 6745, 6833, 6898, 8604, 9239, 9308, 9397, 9400. (N. J.) 6485, 6525, 6543, 9223, 9224. (Pa.) 6794.
- Chelone glabra* f. *tomentosa* (Pa.) 901, 6480, 8827, 8861, 8912.
- Gratiola aurea* (N. J.) 6500, 6527, 9929.
- Gratiola aurea obtusa* (N. J.) 9897.
- Gratiola neglecta* (Conn.) 8579. (N. Y.) 9930. (N. J.) 7367, 9445. (Pa.) 1495, 2822, 5013, 6477, 6994, 7256, 7861.
- Gratiola pilosa* (N. J.) 6486, 6491.
- Gratiola virginiana* (N. J.) 6495.
- Hemianthus micranthus* (N. J.) 6497.
- Ilysanthes dubia* (N. Y.) 6704 p.p., 8429. (N. J.) 6493. (Pa.) 6467, 6474 p.p., 8014, 8837.

- Ilysanthes dubia inundata* (N. J.) 6496.
Ilysanthes inaequalis (N. Y.) 6704 p.p. (N. J.) 3987, 6494,
 6636. (Pa.) 6474 p.p.
Limosella subulata (N. J.) 6635.
Linaria canadensis (N. Y.) 7747, 10143. (N. J.) 6488, 6520,
 6971, 6972, 8182, 9438, 10012, 10021, 10077. (Md.) 8882.
Linaria Linaria (N. Y.) 6699, 7014, 7679, 8710. (N. J.) 6526,
 6548, 7408. (Pa.) 7303, 7968. (Md.) 8881.
Melampyrum lineare (N. J.) 3572, 3818, 3836, 6499, 6522, 6587,
 8167, 9050. (Pa.) 1883, 6481.
Melampyrum lineare latifolium (N. Y.) 6795, 6798, 8440. (N. J.)
 7429, 9219, 9460, 10010, 10054, 10118. (Pa.) 1561, 6501,
 6795, 7880, 7956, 8852.
Mimulus alatus (N. Y.) 7683, 8209.
Mimulus ringens (N. Y.) 6550, 6642, 6683, 7636, 8687, 9190,
 9305. (N. J.) 6537. (Pa.) 6472, 6476, 6502, 7857, 7889,
 8028, 8842, 8958.
Otophylla auriculata (Pa.) 5229, 5230, 5285, 5290.
Pedicularis canadensis (N. Y.) 2386, 6761, 6823, 6905, 7153,
 8433, 9951, 9968, 10141. (N. J.) 6974, 9995. (Pa.) 2612,
 6792, 8753.
Pedicularis lanceolata (Pa.) 1839, 6469.
Penstemon Digitalis (N. Y.) 9423. (Pa.) 6471.
Penstemon hirsutus (N. J.) 7409. (Pa.) 3645, 6716, 7006.
Penstemon pallidus (N. Y.) 7130.
Schwalbea americana (N. J.) 9028, 10086.
Scrophularia leporella (N. Y.) 6790, 6888, 6910, 7732, 8323.
 (N.J.) 10098. (Pa.) 4993.
Scrophularia marilandica (N. Y.) 8220. (N. J.) 9904. (Pa.)
 6468, 6504, 8108.
Verbascum Blattaria (N. J.) 7053. (Pa.) 6475, 7971.
Verbascum Lychnitis (Pa.) 6478.
Verbascum Thapsus (N. Y.) 6684, 8324, 8496. (Pa.) 6479, 7970.
Veronica americana (N. Y.) 6824, 6887, 7186, 7740. (N. J.)
 6533, 9437. (Pa.) 5069, 7238.
Veronica arvensis (N. Y.) 6787, 6867. (N. J.) 7062, 9993.
 (Pa.) 6719, 6999, 7254.

- Veronica Brittonii* (N. J.) 10100.
Veronica Chamaedrys (N. Y.) 6768.
Veronica officinalis (N. Y.) 6880, 7023, 7118, 7623, 8423. (N. J.)
 6528, 7414. (Pa.) 6718, 7965.
Veronica peregrina (Pa.) 6995.
Veronica scutellata (N. Y.) 6641.
Veronica serpyllifolia (N. Y.) 6788, 6830, 6911.
Veronica Tournefortii (Pa.) 6466.
Veronicastrum virginicum (N. Y.) 7731, 8697, 9851. (N. J.)
 6529, 10104. (Pa.) 373, 4980, 4981, 6470, 7778, 8003, 8082,
 9000, 9016.

ADDITIONS AND CORRECTIONS

- Page 111, line 19.—Delete word “persistent.” The tubercle-like base of the style lasts but a short time after anthesis, not until the fruit is mature.
- Page 111, last line.—VI. VERONICEAE, not “DIGITALEAE.”
- Page 112, line 9.—Add word “usually” before “parasitic.”
- Page 112, line 19.—Add word “one” so as to read “Two stigmatic lines, one down each side of style-apex.”
- Page 112, line 22.—Add to characterization of genera contrasted with *Buchnera*, “Calyx not bracted at base.”
- Page 113, line 12.—Add to characterization of *Buchnera*, “Calyx bibracteolate at base.”
- Page 113, line 19.—Add to characterization of *Schwalbea*: “Calyx bibracteolate at base.”
- Page 113, line 22.—Add to characterization of genera contrasted with *Schwalbea*, “Calyx not bracted at base.”
- Page 114, line 10.—Add phrase “to four” so expression reads “Seeds maturing two to four to a capsule.”
- Page 152, line 13.—Add “*Linaria canadensis* occurs occasionally in a pink-flowered form.”
- Page 168.—13. *Veronica Brittonii* Porter and Page 170.—14. *Veronica glandifera* Pennell. It should have been stated that both these newly described species are segregates from the complex known as *Veronica Anagallis-aquatica* L. This name belongs to some one of several Palaearctic species, all of which differ from our plants.